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ANNUAL REPORT OF THE AGRICULTURAL DEPARTMENT FOR
THE YEAR 1959

PART I

Policy was further implemented by a declaration on Livestock Policy - a copy of which appears at Appendix I. Otherwise, policy objectives remained as set out in the Annual Report for 1958.

WEATHER CONDITIONS

2. The season was rather unusual as there was a cool wet spell in March and April, which are normally hot and dry months. This had an adverse effect on the staple crops of corn and beans as many "milpas" did not have a good, clean burn. Failures of the corn crop were recorded, as a result, in parts of Orange Walk and Corozal Districts. Swamp rice was adversely affected in Toledo.

3. In some areas, particularly in the North and centre of the country, the unseasonal rainfall was followed by a comparatively dry weather in June and July, which are normally months of sustained rainfall.

4. Total rainfall varied from 35.75" in Corozal (14.03" below average) in the extreme north to 191.16" at the Agricultural Station at Punta Gorda (42.36" above average) in the extreme South. Weather details are shown at Appendix II.

CROPS

Citrus

5. 272,782 boxes of grapefruit and 341,251 boxes of oranges were delivered to the factory during the year. Production details are shown in Table I.

TABLE I

	<u>UNIT</u>	<u>TOTAL</u>
Fresh Fruit Trouthall	Bxs.	35,771 cases
Grapefruit Sections	A/2-24	142,921 "
Grapefruit Juice	A/2-24	9,800 "
Grapefruit Juice	A/10-6	46,141 "
Grapefruit Concentrate	A/10-6	2,133 "
Grapefruit Concentrate 4/1	Bbls-43 gals.	527 bbls.
Grapefruit Concentrate N/S	Bbls-43 gals.	118 bbls.
Grapefruit Oil	Lbs.	3,690 lbs.
Orange Juice	A/2-24	104,922 cases
Orange Juice	A/10-6	39,938 "
Orange Concentrate 6/1	A/10-6	774 "
Orange Concentrate 6/1	Bbls.-43 gals.	1,258 bbls.
Orange Concentrate 65 Brix	A/10-6	15,787 cases
Orange Oil	lbs.	93,427 lbs.

6. The 1958/59 season was a good one. Prices paid were \$1.08 per box of grapefruit and \$1.44 per box of oranges. A conference was held in London on the future of the industry in the Caribbean and proposals were discussed on the introduction of subsidies for fertiliser and spraying.

7. A soil survey in Stann Creek, where there is the greatest concentration of orchards, was commenced with a view to making fertiliser recommendations.

8. The Citrus Growers Association held its first field day in August at United Farms in the Cayo District. The principal guest speaker was Dr. Ivan Stewart of the Citrus Experimental Station at Lake Alfred, Florida.

Sugar Cane

9. The total acreage of cane in the Northern Districts, as obtained from a survey conducted by the Department, was estimated at 12,990 acres. Of this, 8,140 acres were under ratoons, 2,950 acres under plant cane for the 1960 crop and 1,900 acres under plant cane for the 1961 crop.

10. The grinding season commenced on 25th November, 1958 and continued until the 29th August, 1959. Figures from the Factory are shown in Table II.

TABLE II

Totals and averages for the 1958 - 59 crop:

Tons of cane ground	159,017.47
" sugar made	16,712.43
Gallons molasses made	800,247.00
" " sold	24,499.00
" " ditched	419,985.00
Average grinding rate (Two per hour)	36.89
Tons cane per ton 96° sugar	9.40
" " " " Com sugar	9.51
Average juice purity	85.08
" " brix	19.12

11. The total of 16,712.43 tons of sugar was made up of:-

Plantation White	1,348.03 tons
Local Brown	1,200.00 tons
Export	14,164.40 tons

12. Sixty-one cane farmers delivered 15,074 tons of burnt cane and it was estimated that a further 3,300 tons of burnt cane rotted before it could be delivered. Unlawful burning of cane was on the increase.

13. A total of 168 farmers, including the larger estates, used 592 short tons of fertiliser (261 tons Sulphate of Ammonia, 81 tons of Triple Superphosphate and 250 tons of mixed fertiliser) There are some 400 cane farmers, of all sizes, producing cane for the factory.

14. Froghopper attack, which was serious in 1958, was negligible in 1959. Members of the Cane Planters Cooperative purchased, on a loan through the Agricultural Credits Fund, some 75 short tons of Agroside but did not use it. Rodent damage was reported in many of the smaller fields.

15. In the Toledo District, 4 small mills were in operation - two producing crude brown sugar and molasses and two molasses only, all for local consumption. Two distilleries produced 8,280 gallons of rum.

16. Two Ordinances to control the Sugar Industry were passed in December, 1959. These were:-

- (i) The Sugar Industry (Control) Ordinance;
- and (ii) The Sugar Cane Farmers Association Ordinance.

17. There was a seasonal shortage of labour for cane cutting, but this was offset by itinerant labour from Mexico in June and July.

Coconuts

18. Annual production was estimated at 2,055,565 nuts from some 10,223 acres. The Coconut Industry Board, under the Coconut Industry (Control) Ordinance, issued licences for copra manufacture and export and for the export of whole nuts, and guaranteed minimum prices.

19. Seven copra driers were in use and 85 tons of copra were manufactured. Of this, it was estimated that some 90% was of first grade quality.

20. The Secretary of the Coconut Industry Board became responsible for the administration of loans granted to coconut growers, acting as an agent for the Agricultural Credits Fund who made bulk loans to the Board.

Bananas and Plantains

21. No shipments were made from the estate at Waha Leaf during the year. The estate was affected by Panama Disease and Leafspot and the variety "Golden Beauty" was substituted for Gros Michel and Lacatan. Seventy acres (21,000 mats) of Golden Beauty were planted. Copper sprays continued to be used against Leafspot.

22. Supplies were adequate for the local market. Prices for plantains varied from 60¢ per 100 during a period of glut to \$1.50 per 100 in June. The average was about \$1.00 per 100.

Pineapples

23. The main concentration for this crop is in the Corozal district, a relic of the industry there. Production has been curtailed to cater for the local market, with some sales to Chetumal in Mexico. Wholesale prices varied from 80¢ to \$1.10 per dozen for re-sale in Belize or Chetumal.

Cacao

24. 60,030 plants were purchased by farmers from the Cocoa Station at Stann Creek, as against provisional requests for 80,000. Of this total, the Hummingbird Development Company purchased 25,700 or 41.6%.

25. Table III shows the acreage planted to cacao, in Stann Creek and Cayo Districts, between 1957 - 1959.

TABLE III

	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>Total</u>
Material from Department	100	75	200	375
Other sources	50	161	275	486
	<u>150</u>	<u>236</u>	<u>475</u>	<u>861</u>

Additionally, 11 acres were planted in the Toledo District in 1959.

26. "Cushion Gall" disease was identified at the Colonial Development Corporation plantation at Alta Vista. Main pests on cacao were squirrels and ground moles. There were minor occurrences of Thrips and Black Pod which were brought under control.

27. The clonal nursery, for stem and leaf cuttings, was enlarged to 2 acres, consisting of clones of I.C.S. 39, 40, 46, 84 and 95. 5,503 plants from stem cuttings and 557 from leaf cuttings were produced. Importations of budwood and hybrid seeds from St. Lucia and the Trinidad Cocoa Board were made.

28. The Alta Vista estate fermented and exported some 5 short tons of beans to the United States of America, valued at \$5,793. In addition, it sold 10,625 pods valued at \$850 for seed locally, to the Department and to the Hummingbird Development Company.

Rice

29. "Hoja Blanca" disease was recognised for the first time and was responsible for large losses in the crop in the Belize district. The Tennessee Agricultural Company, which bought out the Pilot Rice Scheme at Mussell Creek, was particularly hit by the disease. It is estimated that 90% of the crop in the Belize district was lost.

30. The unseasonal rain in March and April affected plantings in the Toledo district and, by preventing initial mechanical cultivation, no crop was planted in the Dump. Only 657 acres, as against 2,249 in 1958, were planted and Marketing Board purchases dropped from 1,604,276 lb. in 1958 to 680,295 lb., in this District.

Maize

31. 1959 was not a good year for maize. The record throughout the country was less acreages planted and poor yields. Five villages in the Orange Walk district were reported to have lost the entire crop, amounting to some 425 acres. The unseasonal rains in March and April prevented a clean burn and delayed planting. Crops planted in the Northern Districts then suffered from unusually dry conditions during the growing season. Yields from Corozal were reported to be as low as 182 lb/acre. The acreage planted in Toledo decreased from 3,207 acres in 1958 to 2,263.

Beans

32. The most successful area for the Red Kidney Bean crop was Toledo. There the Indians plant on hillsides, thus providing good drainage conditions. Production was estimated at 299,788 lb. for the 1958/59 season as against 221,618 lb. for the 1957/58 season.

33. Elsewhere, and particularly where planted on the flat, the growing of this crop is a gamble on what the weather is likely to be at the time of flowering and setting of fruit. Rain at this time where drainage is impeded results in Anthracnose and decreased yields.

34. Yields in the Northern districts and in Belize and Stann Creek districts were poor. In Cayo, yields approximated to some 720 lb/acre which is only fair.

35. Farmers continue to plant the Red Kidney Bean crop in view of the incentive of high prices offered by the Marketing Board. In a good year, when weather conditions at flowering and setting are favourable, handsome returns can be obtained for a minimum of effort.

36. As a result of the failure of the rice crop in the Belize district, a free issue of 11,000 lb. of bean seeds was made to 217

farmers by Government for use in the 1959/60 season.

Root Crops

37. The Caribs of the Stann Creek District continue to be the major producers of cassava, yams and cocoyams. In other areas there is a limited production, mostly for the market in Belize. While yields were depressed due to weather conditions, there were no shortages.

Vegetables

38. The Department continued to provide seed supplies. The best vegetables are grown during the months of December to March.

LIVESTOCK

Cattle

39. Encouragement to the cattle industry was provided by the continuation of a Development and Welfare Subsidy Scheme for improved pastures and the importation of breeding stock.

40. On the portion of the scheme affecting pasture improvement, subsidy was payable on land clearing, the purchase of grass seeds and planting, wire for fencing, water supplies and drainage. 148 applicants qualified.

41. Subsidy was also payable on the importation of cattle of the Brahman and Red Poll Breeds. Eleven applicants qualified and, by the end of the year, 30 Brahman bulls and heifers had been imported. Total subsidy payments amounted to \$34,521.

42. The unseasonal weather in the dry season kept pastures green and there was no shortage of grass during these usually difficult months. Condition of cattle was rather better than in more normal years.

43. Other than isolated cases of tick and shipping fevers in newly imported cattle, there were no outbreaks of disease of note. Warts were of minor importance, although a few cases were treated.

Pigs

44. Some 2,000 pigs were consigned from Toledo to the Belize Slaughter House. There was an outbreak of swine fever which was brought under control by vaccination and by the slaughter of affected animals.

45. The Department of Agriculture imported a nucleus herd of Large Blacks, to replace the previous Berkshire herd.

Poultry

46. The influence of the Mennonite settlements was apparent in the quantities of eggs and poultry meat available. There was some depression in prices as a result. There were minor outbreaks of fowl typhoid in the Toledo District.

Bees

47. The beekeeping industry expanded - with 1,108 hives in 1959 compared with 996 at the end of 1958. The greatest concentration of hives is in the Corozal and Orange Walk Districts. Sixty-six and a half drums (of 54 gallons) of honey were produced, of which 13 drums

were shipped to the United Kingdom through the Marketing Board.

MARKETING AND AGRICULTURAL CREDIT

48. The Marketing Board offered guaranteed prices to farmers for Corn, Paddy, Red Kidney Beans, Baby Red Beans, Annatto and Black Eye peas.

49. Corn purchases fell from 1,217,360 lbs. in 1958 to 1,113,612 lbs. in 1959 - a drop in value from \$35,897 to \$28,216.74. Purchases of annatto and black eye peas were negligible.

50. The Agricultural Credits Fund Committee authorised 216 loans totalling \$50,690.21. Of this, loans totalling \$17,225 were made to 186 Cane planters for the purchase of Agroside. The Committee now maintains its own field staff and two of these, as well as the Administrative Secretary, attended a six months course in the United States of America.

PRODUCER ASSOCIATIONS AND FARMER'S GROUPS

51. The following Associations continued in operation:-

The Cane Planters Cooperative Association
The B.H. Citrus Growers Association
The B.H. Livestock Cooperative
The B.H. Cocoa Growers Association.

52. The Mennonite community totalled 1,822 persons. Of these, 1,393 were in the Orange Walk District - at Blue Creek and Shipyard. Emphasis was on land clearing for cultivation and some 1,500 acres were cleared in that area. The main production has been eggs, fowls and vegetables.

PART II

WORK OF THE DEPARTMENT

Staff

53. Mr. R. Hill was appointed Agricultural Education Officer, a post which was vacant since July 1957, and assumed duties on the 24th September. Mr. C. von Ramm, the Agronomist, resigned on the 31st July and Mr. F. F. Orio Jr., Assistant Agricultural Officer, on the 1st September. Mr. P.B. Lizarraga retired on the 6th August after 21 years service.

54. New appointments were:-

Miss P. Espejo, formerly Clerk/Storekeeper, to Technical Assistant

Mr. L.L. Leslie, to Senior Technical Assistant (Artist)

Miss J. Aguillo, from Social Development, to Home Economics Demonstrator

Mr. N. H. Hall as Assistant Analyst

Mr. C. C. Palacio as Farm Demonstrator Grade II

Mr. C. Harrison as Clerk/Handyman

55. Promotions were:-

Mr. J. A. Lizama from Farm Demonstrator Grade I to
Assistant Agricultural Officer

Mr. J. L. Brackett from Farm Demonstrator Grade I to
Senior Farm Demonstrator

Mr. F. B. Arana from Farm Demonstrator Grade II to
Farm Demonstrator Grade I

Mr. L. B. Flores from Farm Demonstrator Grade II
to Farm Demonstrator Grade I

56. The following senior officers went on long vacation leave:-

Mr. M. A. G. Hanschell, Director, on 3rd November

Mr. S. J. A. Williams, Agricultural Officer, until
14th April

Mr. R. S. Pitt, Agricultural Officer, from 5th October.

57. Mr. A. N. C. Thomas, Senior Agricultural Officer, acted as
Principal Assistant Secretary (Public Utilities) from the 1st July to
the end of the year.

OVERSEAS TRAINING COURSES

58. The following attended an Extension Workshop in Tegucigalpa in
the Republic of Honduras:-

Mr. E. G. Russell, Agricultural Officer

Mr. F. Bautista, Farm Demonstrator Grade I

Miss J. Aguillo, Home Economics Demonstrator.

Messrs S. Escalante and G. Hernandez, Farm Demonstrators Grade II,
returned from a 15-month course in Puerto Rico. Messrs L. B. Flores,
J. Carillo and A. Tzul went to Puerto Rico in August for a 2 year
course.

AGRICULTURAL EDUCATION

59. As mentioned in para. 53, the new Agricultural Education
Officer assumed duties in September and, between then and the end of the
year, toured the districts to select candidates for a course to commence
in early 1960.

60. A 3-day extension course, sponsored by I.C.A., was held at
Central Farm in December. All Agricultural Officers attended.
Centr

EXTENSION WORK

61. The Extension staff was occupied with its usual duties of
advice, provision of seeds and planting materials, land inspection

for location tickets and for loan applications, veterinary services and control of pests.

62. On the lines recommended by the Jamaica Government Statistician, a basic census - as a preliminary for one in 1961 - was undertaken. Information collected included number of farms, size and distribution, forms of land tenure, pattern of land use and farm labour.

63. A specialised survey, in the cane district of Corozal was undertaken in October and November. Figures on acreage and crop estimates were collected as a basis for deciding quotas for 1960.

64. An information section was created during the year by the appointment of a Senior Technical Assistant (Artist) and a Technical Assistant (Publications). The latter was sent on a training course arranged by I.C.A.

DISTRICT AGRICULTURAL STATIONS

Corozal

65. A new office, in a building shared with the Customs Department, was occupied in June. Work on the Agricultural Station, which had been closed for some years, was commenced. The staff was mostly employed on extension services on cane, the most important crop in the area.

Orange Walk

66. The Station continued to provide services such as stud animals for hiring, the sale of plants, vegetable seedlings and seeds, veterinary drugs, fertilisers and insecticides and the hiring of tractors and equipment.

67. Main sales of seeds and planting materials were:-

4,572	coconut seedlings
1,119	vegetable seedlings
1,782	packets of vegetable seeds
4,835	miscellaneous plants

68. Stud services to farmers were:-

Bull	-	13	cows
Boar	-	17	sows
Jack	-	28	mares

69. An additional two acres of Pangola and three acres of Jaragua pastures were established and the perimeter fencing of the station completed. Two stores were completed, renovated and extensive repairs done to quarters.

70. Revenue collected was:-

Head 4/10	\$ 87.44
Head 4/25	681.98
Deposit Special D3441	514.78
Deposit Special D3470	463.75

Stann Creek

71. A part of the station was handed over to the Cocoa Section which is reported on separately. 10,000 citrus plants were established for 1960 budding and 4,656 budded plants were sold. 668 grafted mangoes

(of 9 varieties) were ready for sale at the end of the year and a further 300 for grafting in 1960.

72. A total of 1,257 coconut plants (talls) were sold to farmers and 125 Dwarfs (ex-St. Lucia) were planted out on the Station. 156 various horticultural plants (Roses, Hibiscus and miscellaneous fruit trees) were sold. 58 packets of vegetable seeds were used on the Station and 664 packets sold.

73. After culling, 10 cows, 10 heifer calves, 12 bull calves and one bull were sold for butchering. At the end of the year the herd totalled 44 - 1 bull at stud, 18 cows, 14 heifer calves and 11 bull calves. There were 22 births.

74. The dairy did quite well, producing a total of 21,983 lb. milk from 14 cows. Supplies at times fell short of the demand.

75. Pangola pastures were fertilized and maintained and it was necessary to weed to eradicate Mimosa pudica. A Jaragua pasture was established and did well. The overall grazing capacity was found to be 1.46 animals per acre.

Cocoa Station

76. Work was concentrated on enlarging propagator and nursery shed facilities. The rooting efficiency for stem cuttings was 82.4% and that of single leaf cuttings 67.8%. A Bahnson centrifugal humidifier was erected which is capable of holding 3,000 potted cuttings at one time. The propagator capacity was increased up to some 30,000 plants per annum.

77. Two 4-KW generating plants were purchased and installed for power to the humidifier and booster pump. Work was begun on an estate type fermentary toward the end of the year. This is designed to ferment up to 8 tons at a time.

Punta Gorda

78. 150 dwarf coconuts and 515 talls were planted out as a future seed supply. A nursery of 500 talls was set out. Pasture was increased by the establishment of $2\frac{1}{2}$ acres Jaragua and 1 acre of Pangola.

79. At the end of the year, there were 12 head of cattle. There were 5 births during the year and 4 animals sold. The Berkshire Boar, which was used at stud, died during the middle of the year.

Central Farm

80. A further 100 acres of high bush was cleared, windrowed and heavy harrowed by the end of February. Twenty-two acres were planted up with Pangola by the end of January. This area was fenced and subdivided into 4 equal paddocks. A further 4 acres were planted with Pangola towards the end of the year.

81. One hundred and seventy-seven acres were sown with Jaragua seed at the rate of 20 lb/acre and a further 22 acres at a rate of 11 lb. Germination in the former case was good.

82. Thirty-four acres were established under Guinea Grass and 12 acres under Molasses. The older established pastures benefited from resting and rotational grazing.

83. Some 3 miles of fencing were put up, using 4,000 fence posts and 400 strainer posts by contract.

84. It was found necessary to drain and camber the 25-acre block

of coconuts which were established in 1958.

85. Four separate herds of cattle were maintained during the period. These were:-

- (a) The Red Poll herd, consisting of 24 cows and heifers with 3 bulls. All animals have been branded, numbered and a herd book opened. This herd is intended as a source of bulls for upgrading local cross-bred Brahman cows.
- (b) The Brahman herd, comprising 20 heifers imported from Texas. Three young bulls were obtained from Worthy Park, Jamaica. All heifers were branded and numbered and a herd book opened. The herd will be a source of quality Brahman bulls for local use.
- (c) The local herd, consisting of 32 cows of mixed origin, mostly of Jersey and Holstein blood. The cows are run with a Brahman bull which has produced some calves of promise. This herd demonstrates upgrading of local stock with Brahman blood.
- (d) The dairy herd, comprising 15 cows - 13 of Jersey descent and 2 Red Polls. The average daily yield was $17\frac{1}{2}$ lb. per cow. The output amounted to 6,485 gallons, disposed of as follows:-

Fed to dairy calves	2,036 $\frac{1}{2}$ gallons
Fed to pigs	2,665 gallons
Sold to consumers	1,683 $\frac{1}{2}$ gallons

Revenue amounted to \$1,385.95.

86. Four Large Black gilts farrowed in January giving a total of 33 piglets. Two were served and farrowed down in December, producing 24 piglets. Piglets from the first farrowing averaged 30 lb. at weaning at 8 weeks.

87. A total of 60 pigs, including the remaining Berkshires, were sold to farmers for \$1,048.90. One Berkshire Boar was supplied to Gracie Rock Prison Farm and one gilt transferred to Stann Creek.

88. Two Suffolk rams were imported from Texas in November for experimental crossing on local ewes.

LAND CLEARING SECTION

89. The Unit consisted of 4 D7 Caterpillar tractors and 2 D4s with ancillary equipment. To meet popular demand, machines were widely dispersed and work was undertaken in all districts. Total staff employed, included supervisory and operational, amounted to 18.

90. An area of 700 acres, in all districts, was cleared. In addition, 5,000 operational hours were undertaken on roads, drains, embankments and other clearing. Two old D8s were sold for \$8,100. Total expenditure for the Unit was \$62,559.74 and total revenue, including the proceeds of the sale of the D8s \$45,825.35.

MECHANICAL SERVICES

91. This is based at Central Farm, where there is a modern and fully equipped workshop, under the control of an Equipment Overseer.

92. Excepting machinery for landclearing, this Section is responsible for the upkeep and repairs of all machines and mechanical equipment. This amounted to a total of 193 units, varying from Land Rovers to powered lawn-mowers.

93. Maintenance is of a high standard and complete costings were kept on all work done. Regular visits were paid to all districts for inspection and running repairs.

VETERINARY SERVICES

94. The Veterinary Officer, based at Central Farm, was available during the entire period. In addition to clinical services, he was in charge of the Livestock and Pasture Investigational Unit, financed by Development and Welfare funds, at Central Farm.

95. In addition to regular tours of inspection, first-aid was rendered by Farm Demonstrators under the direction of the various district Agricultural Officers. Chief treatments were:-

(a) Horses

One for Arthritis, 26 castrated, 9 for colic, 13 for Equine Influenza, 16 for Enteritis, 3 for foot ailments, 10 for Lampas, 4 for mange, 30 for internal and 2 for external parasites, 4 for tetanus and 42 for various wounds.

(b) Cattle

One for Abortion, 1 for Arthritis, 155 castrated, 18 for Catarrh, 1 for Coccidiosis, 15 for Enteritis, 3 for foot ailments, 4 for mange, 9 for Mastitis, 240 for internal and 65 for external parasites, 25 for warts and 34 for wounds.

(c) Pigs

One hundred and eighty-nine castrated, 10 for Enteritis, 129 for internal parasites, 4 for tetanus and 14 for wounds etc. 466 were given inoculations against Swine Fever.

(d) Sheep

Three castrated, 2 for mange, 19 for internal parasites and 7 for wounds.

(e) Poultry

649 for Coccidiosis, 55 for Coryza, 64 for internal parasites and 5 for wounds. 5,318 were inoculated against Fowl Cholera and Typhoid, 227 against Fowl pox and 10,815 against Newcastle.

(f) Dogs

Three castrated, 6 for distemper, 16 for internal parasites and 9 for wounds.

96. In addition to the above, the Veterinary Officer personally attended to 131 clinical cases and performed 21 post-mortems and 24 laboratory examinations. Figures are exclusive of work on Government livestock.

TRIALS AND EXPERIMENTAL WORK

97. The Research Section, under the charge of the Agricultural Chemist, lost the services of the Agronomist on 31st July. Three Farm Demonstrators and 1 Assistant Analyst were available.

98. Laboratory work was mostly confined to soil analyses and to leaf analyses. Some work was also done on pine needles on behalf of the Forestry Department. Analyses of the soils of the citrus orchards in Stann Creek resulted in a recommendation of an annual dressing, for 3 years, of 2 tons of lime per acre.

99. Soil surveys, with subsequent mapping, were undertaken at Central Farm (300 acres) Xaibe in the Corozal District (3,000 acres) Stann Creek (2,500 acres) and Silkgrass (2,000 acres).

100. Fertiliser trials were continued on:-

(a) Sugar Cane

At Yo Chen, on Lousiville clay, fertiliser treatments showed an increase in yield from 40.5 to 53.8 short tons per acre. Sulphate of Ammonia and Triple Superphosphate showed responses, with 400 lb. and 150 lb. respectively as the upper economic limit.

Experiments were also undertaken on Xaibe clay soils at San Andres and at Xaibe on ratoon and plant cane. In all cases, Sulphate of Ammonia and Triple Superphosphate showed responses, but not Potash. The best combination was 200 lb. of Sulphate of Ammonia with 200 lb. of Triple Superphosphate, increasing yields from 30.4 to 51.9 short tons. Improved cultivation methods on Departmental plots resulted in increases over farmer's plots.

(b) Citrus

Nine fertiliser trials are in operation as follows:-

5 with 3 levels each of nitrogen and lime
2 with trace elements
2 N P K trials

but none, as yet, showed treatment effect.

(c) Pasture

Four trials were initiated, late in the year, on Pangola at Toledo, Belize, Corozal and at Central Farm, and one each on Guinea and Jaragua. These trials were designed to measure dry matter and protein yield at four levels of nitrogen.

(d) Coconuts

A simple trial at Central Farm, involving 6 treatments at 2 levels each, was instituted on young coconuts in September.

101. Agronomy trials were undertaken on:-

(a) Pasture introduction

23 grass and 6 legume species were introduced from Kitale Grassland Station, Kenya. Promising ones were Brachiaria ruziziensis, strains of Cenchrus ciliaris, Chloris gayana,

Cynodon dactylon and the legumes Clitoria ternatea and Stylosanthes gracilis.

(b) Groundnut varieties

Yields of 5 West African varieties did not conform to those of 1958. In 1959, the best, with 1912 lb/acre, was MT371.

(c) Sugar Cane Varieties

Work was undertaken, in the Northern Districts on POJ 2878, B4098, B41211, B41227 and B37161. The highest yield was obtained from B41211, with 68 short tons per acre.

(d) Rice

Following identification of "Hoja Blanca", preparations were made for the testing of varieties for resistance. Rice varieties were ordered from West Africa, Trinidad, U.S.A., El Salvador, Ceylon, Malaya, the Philipines and Hong Kong.

LEGISLATION

102. The Sugar Industry Control Ordinance (No. 12).
The Sugar Cane Farmers Association Ordinance (No. 13).
Poultry Disease Regulations (S.I. No. 26)
Swine Fever Regulations (S.I. No. 27)
Anthrax Regulations (S.I. No. 29)
Foot and Mouth Disease Regulations (S.I. No. 31)
Grading of Maize Regulations (S.I. No. 28).

FINANCE

103. Expenditure was:-

(a) Local Budget

Personal Emoluments	\$ 70,877	
Other Charges	112,885	
Capital	<u>20,626</u>	\$204,388

(b) D & W Funds

Personal Emoluments	99,988	
Other Charges	126,319	
Capital	<u>198,264</u>	\$424,571

(c) Hurricane Rehabilitation

Other Charges	501	
Capital	<u>24,120</u>	\$ 24,621
		\$653,580

104. Revenue was:-

(a) Local

Sale of Govt. stores	\$ 251.14	
Receipts from Central Farm	1,041.15	
Sale of Plants & Produce	6,396.76	
Veterinary fees	<u>22.40</u>	
		\$7,711.45

(b) D & W

Payment for sale of		
Rice Scheme	\$12,381.37	
Cocoa Plants	3,220.33	
Sale of Milk & Produce	7,168.04	
Land Clearing	<u>45,825.35</u>	
		<u>68,595.09</u>
		\$76,306.54

VISITORS

105. Visitors from overseas included:

Mr. Burrowes - Statistician, Jamaica; Mr. H. Montgomery-Hyde, M.P. and Rev. L. Williams M.P.; Dr. F. Reynolds, I.C.A. Plant Pathologist; Mr. V. Mesley, President of the Canadian Beekeepers Association; Mr. N. H. Kraus, Entomologist, Hawaii; Sir Hilary Blood, Constitutional Commissioner; Mr. J. Downie, Economic Adviser; Señor Merino Fernandez, Governor of Quintana Roo; Mr. P. H. Jennings, Deputy Director of Colonial Audit and Mr. Eaton, Information Officer, Jamaica.

A. N. C. THOMAS
for Director of Agriculture

Central Farm,
26th April, 1961.

LIVESTOCK POLICY OF BRITISH HONDURAS

The following policy for livestock in British Honduras as approved by the Governor in Council is published for general information:-

The Livestock Policy of the Government of British Honduras is:-

1. CATTLE

- (a) Milk - To continue to provide technical advice if required or asked for, through the Agricultural Extension Service, but not to devote specific funds to the development of a dairy industry at this stage.
- (b) Beef - (i) To provide all possible incentives for the development of a sound industry which can be regarded as a profitable and long-term investment.

(ii) To build up a pure bred Brahman herd and a Jamaican Red Poll herd at Central Farm from which to provide locally bred bulls to farmers at reasonable prices and to study problems connected with cattle breeding.

(iii) To establish an investigational unit at Central Farm under the direction of the Veterinary Officer on 500 acres of land which is already perimeter fenced, and where investigations will be undertaken in grassland, husbandry and management, and live-stock breeding.

(iv) To import a number of pure bred Brahman bulls of a commercial type for use in the Revolving Bull Scheme.

(v) To provide aid as long as possible, by Livestock and Pasture Subsidy Schemes, to farmers in establishing improved pastures and purchasing improved breeding bulls of Brahman, Jamaica Red Poll and Santa Gertrudis breeds, or any other breed approved by the Director of Agriculture.

2. PIGS - To maintain a nucleus herd of improved stock (Large Blacks) in order to provide a supply of breeding stock to farmers. To investigate nutrition and dietetics and to provide all possible incentives to make pig-keeping an economic proposition.

3. SHEEP - To investigate and encourage the raising of sheep by demonstrating conditions of management and breeding which will improve the local breed. To import selected breeding stock for improving the local strain. This will be carried out either in the Northern Districts or at Central Farm or both stations under the supervision and direction of the Veterinary Officer.

4. GOATS - To enquire into the feasibility of keeping milch goats by carrying out investigations with a small imported nucleus stock of an improved type.

5. POULTRY - (i) To facilitate and encourage the importation of day old chicks from flocks registered free of disease.

(ii) Since improved breeds of poultry can be successfully reared and are being successfully reared in this country, no investigational work will at present be undertaken by the Department but advice and help will be given through extension services.

(iii) To investigate ways and means of obtaining a cheap supply of protein feeding.

6. HORSEKIND - To assist in meeting the demands for mules by obtaining a number of Kentucky Jack Donkeys for stationing in areas where the demand for their services as sires is greatest.

7. GENERAL - To enact and enforce legislation to prevent and stem the spread of animal and poultry diseases through controlled importation and vigorous control measures against endemic and epidemic diseases.

MONTHS	T E M P E R A T U R E					R E L A T I V E H U M I D I T Y			
	M E A N M O N T H L Y M A X I M U M			M E A N M O N T H L Y M I N I M U M			M O N T H L Y M E A N		
	Belize	Stann Creek	Toledo	Central Farm	Belize	Stann Creek	Toledo	Central Farm	
JAN.	84	82	82	N.A.	71	68	67	63	89
FEB.	87	84	85	84	75	69	67	66	87
MARCH	88	86	85	84	73	66	68	66	88
APRIL	88	85	87	85	76	72	70	69	85
MAY	89	87	84	88	77	73	71	69	85
JUNE	90	89	84	88	77	74	71	72	85
JULY	89	87	85	87	76	73	70	71	83
AUG.	90	88	86	88	76	73	70	70	83
SEPT.	91	89	86	85	77	73	70	71	80
OCT.	91	89	85	84	77	74	70	71	80
NOV.	87	85	83	81	71	69	70	66	79
DEC.	83	82	83	79	76	66	71	62	80

APPENDIX III

LOCAL WEIGHTS AND MEASURES

1 quartia - $\frac{1}{2}$ almud - $2\frac{1}{2}$ quarts
1 almud - 5 quarts
1 benequen - 15 quarts
1 shushack - 4 almuds
1 cargo - 60 quarts - 12 almuds

1 barrel - 110 quarts

300 ears of corn in husk - 60 hands

1 hand - 5 ears i.e. the number picked up in each hand when
counting ears

60 hands - 300 ears - (should shell out to) 1 cargo

1 mecate - 1 task - 25 yards x 25 yards approximately
one-eight acre

16 mecates - 1 manzana - approximately 2 acres
($8\frac{1}{2}$ varas plus 1 machete length - 1 mecate)

1 cart load firewood - 300 sticks at 3 feet long

1 fathom - 6 feet - brassada

(Brassada is literally the distance
between out-stretched arms (brassos))

Citrus

A unit of grapefruit is a 70 lb box

A unit of oranges is a 90 lb box

A/2 juice carton contains 24 x 12 oz tins

A/10 juice carton contains 12 x 24 oz tins

Barrels contain 43 gallons

4 British Honduras Dollars equal £1 Sterling

1 British Honduras Dollar equals Five Shillings Sterling

APPENDIX IV

SUMMARY FOR RAINFALL FOR 1959

DISTRICTS & STATIONS	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL 1959	TOTAL 1958	AVERAGE 10 YEARS
COROZAL DISTRICT															
Corozal Town	1.52	.91	.86	1.00	2.14	2.08	3.81	6.24	3.75	12.11	1.16	.15	35.75	58.75	49.78 (A)
Corozal Agstat	2.18	1.26	1.08	1.01	2.60	1.82	4.11	7.43	2.15	11.61	.71	.75	36.26	N.A.	N.A.
Louisville	1.88	.85	1.74	1.78	3.36	3.02	3.59	6.70	2.95	6.81	2.49	nil	35.17	46.57	52.58 (B)
Pembrokehall	1.65	1.39	1.36	1.38	2.94	1.16	3.39	5.67	2.58	7.41	1.92	nil	30.85	62.12	45.86 (B)
ORANGE WALK DISTRICT															
Orange Walk Town	2.17	.79	.23	2.29	2.29	6.81	3.60	3.00	3.22	5.88	N.A.	nil	N.A.	N.A.	N.A.
Orange Walk Agstat	2.01	.96	1.40	1.68	3.75	6.33	3.42	3.88	2.17	2.81	2.20	1.31	31.92	51.85	N.A.
Gallion Jug	4.51	1.50	2.37	5.07	4.68	13.53	8.86	5.02	4.17	3.59	4.48	.88	58.66	54.44	60.00
Freshwater Creek	7.37	3.31	3.34	3.60	12.40	9.88	9.91	7.15	8.69	11.62	8.59	nil	85.86	111.31	75.75 (A)
August Pine Ridge	nil	3.05	2.10	3.40	3.07	4.30	2.40	2.10	4.80	1.10	2.15	.73	29.20	51.01	56.97 (B)
BELIZE DISTRICT															
Belize Town	5.73	.69	1.06	8.79	1.24	7.58	4.18	2.23	4.04	5.40	3.91	1.12	45.97	66.93	68.79 (B)
Salt Creek Estate	4.41	2.01	.42	8.52	4.04	4.49	5.79	4.86	3.83	9.51	2.96	1.15	51.72	74.84	63.70 (A)
Gracie Rock Prison	4.82	1.90	.80	6.64	6.93	6.74	3.06	3.25	3.40	7.04	3.68	1.60	49.86	83.07	76.93 (B)
Maskall	2.80	1.43	.71	4.48	1.79	3.27	6.95	7.57	4.60	4.08	4.14	.36	42.18	75.89	61.89 (B)
San Pedro, A. Caye	Started recording again				3.18	1.87	.93	4.49	1.77	2.79	2.72	.52	N.A.	N.A.	N.A.
Stanley Field	4.10	1.63	.34	11.73	1.03	5.42	4.78	4.70	4.63	6.54	4.16	.76	49.82	56.44	63.70 (B)
Luckystrike	2.31	1.97	.64	5.71	5.71	6.76	4.83	5.15	3.95	4.68	4.14	1.55	47.40	78.10	N.A. (B)
Gales Point	5.25	2.05	1.70	7.00	4.30	2.10	1.85	.55	2.70	6.46	N.A.	N.A.	N.A.	78.00	N.S.
CAYO DISTRICT															
Cayo Town	7.79	2.40	3.61	4.05	1.79	5.82	5.35	3.03	5.51	1.06	6.03	3.62	50.06	50.67	51.39 (A)
Central Farm	10.54	1.82	3.79	6.73	2.15	6.99	5.87	3.75	8.86	2.40	9.06	11.05	73.01	56.42	59.70
Augusting Pine Ridge	9.03	.62	2.91	9.58	5.31	7.99	3.98	4.49	4.80	5.95	13.23	5.43	73.32	53.17	61.28 (A)
Benque Viejo	7.58	1.43	4.04	.53	6.96	3.75	7.89	3.24	5.69	2.45	7.34	1.84	50.54	55.38	53.96 (A)
Roaring River	11.07	3.17	5.28	7.91	4.63	9.72	12.54	4.99	5.82	4.92	5.19	5.11	156.24	75.06	89.25 (A)
Sibun Camp	11.65	3.99	4.98	10.61	14.05	12.22	9.33	5.50	5.65	8.45	6.95	6.29	100.77	92.39	N.S.
Millionaire Camp	6.48	.92	2.39	3.25	2.77	6.80	8.26	4.73	6.90	9.86	6.16	4.80	63.32	51.52	N.S.
Norland	9.73	1.70	1.91	6.29	1.85	7.31	6.69	2.80	8.08	2.20	8.08	7.27	63.91	51.97	60.06 (B)

APPENDIX IV (Contd.)

DISTRICTS & STATIONS	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL 1959	TOTAL 1958	AVERAGE 10 YEARS
CAYO DISTRICT (contd)															
Caves Branch	8.20	6.37	5.68	7.58	5.37	8.88	11.36	6.41	6.93	6.26	7.54	5.93	86.51	85.85	N.S.
Never Delay	7.21	2.15	4.65	6.36	8.29	7.76	7.87	6.22	2.55	9.15	6.47	.30	68.98	N.A.	N.S.
Coomia Cairn	5.83	1.44	3.13	12.11	1.97	9.27	2.98	9.72	8.18	6.45	18.07	5.17	83.32	63.29	N.S.
STANN CREEK DISTRICT															
Stann Creek Town	4.48	.77	1.15	4.40	1.74	4.40	3.66	2.54	4.08	2.63	4.36	1.64	35.85	48.08	60.11
Stann Creek Agstat	6.74	2.02	.78	8.13	6.19	11.75	6.57	4.31	7.77	5.28	6.93	2.27	69.54	82.05	84.35
Cow Creek Farm	8.12	5.76	1.53	9.44	6.27	19.51	7.71	8.52	6.17	8.66	5.49	3.27	92.45	N.A.	N.A.
Alta Vista	9.13	6.09	1.57	11.20	7.25	18.08	8.42	7.88	6.30	8.75	7.84	3.21	95.72	N.A.	N.A.
Middlesex	9.43	6.83	1.52	8.90	8.52	15.64	10.60	7.50	5.40	7.48	5.70	3.41	90.93	115.35	107.06
Melinda	7.38	2.32	1.62	11.02	8.11	6.63	6.52	4.38	9.27	6.26	6.03	2.43	71.97	89.37	89.14(A)
Pomona	6.14	3.59	.50	9.16	7.55	15.16	8.40	5.46	6.30	9.13	6.86	3.61	81.86	93.77	92.38(A)
Mango Creek	7.18	6.30	4.71	3.97	9.46	14.43	10.24	10.38	8.69	6.39	2.86	1.67	86.28	106.27	93.34(A)
Sittee River	9.38	1.55	.50	6.24	4.28	7.55	5.58	5.77	6.66	8.35	4.70	4.71	65.27	N.A.	N.S.
TOLEDO DISTRICT															
Punta Gorda Twon	9.96	6.36	4.47	5.95	13.60	19.57	33.51	13.90	17.55	21.11	8.11	1.91	155.00	165.60	149.53
Punta Gorda Agstat	9.56	3.65	4.31	2.93	20.61	23.07	37.24	17.00	30.22	21.38	17.78	3.41	191.16	151.83	148.80
San Antonio	7.21	2.13	2.59	4.31	21.39	17.19	23.41	18.93			5.89	2.44	N.A.	N.A.	N.A.
Barranco	9.25	5.40	5.61	11.77	15.86	31.72	67.72	17.15	38.05	28.05	18.18	4.09	252.85	N.A.	N.A.
Hunting Caye	10.31	7.59	13.62	6.13	7.13	6.91	9.30	4.67	7.97	3.62	10.50	2.33	90.08	N.A.	N.A.
Crique Sarco	N.A.	N.A.	5.36	N.A.	9.31	34.07	55.20	15.01	20.90	22.80	29.48	N.A.	N.A.	137.85	N.A.
Machaca Camp	9.02	2.40	4.39	3.18	16.08	18.16	30.24	17.87	9.69	12.41	6.83	2.53	132.80	137.12	N.S.
Monkey River	8.47	.53	6.38	5.77	10.10	7.34	12.12	12.72	10.36	12.83	12.81	7.82	107.24	N.A.	N.S.
Columbia	N.A.	N.A.	N.A.	6.32	20.63	18.53	27.34	15.69	9.80	11.43	8.01	2.83	N.A.	N.S.	N.S.

NOTE:- A = 8 years, B = 7 years, C = 5 years, O = no records, N.A. = not available, N.S. = new station

